

TECHNICAL SPECIFICATIONS PROMED P50

Technical Features	Value
Size (L x W x H) (mm)	2700 x 1500x 1500
Weight (Kg)	800
Air Pressure (Bar max)	8
Electrical connection required (Kw)	30*
Working Characteristics	Value
Sterilizing Capacity (Kg/ Hour)	15-20
Process Volume Capacity (Lt.)	75
Average Waste Density (Kg/m3)	100-150
Average Cycle Time (Min.)	30
Maximum Steam Flow (Kg/Hour)	100
Sterilization Efficiency (SAL)	8Log10
Consumption / Cycle	Value
Steam (Kg)	6
Electricity (Kw)	1.2**
Water (Lt)	None***

* P50 – P100 – P150 includes built-in electrical steam boiler

** Electrical consumption of the sterilizer only

*** Water consumption of integrated steam boiler: 7 – 12 Lt./ Cycle

All Systems can be customized to customer specifications

TECHNICAL DESCRIPTION PROMED P50

Materials

The materials used for the tank and lids are all stainless steel type 321 quality (Asth USA Standard). The shredder is made of high-strength heat-treated quality steel, which has a high resistance to fatigue and attrition.

The non stainless steel components are treated with anti-corrosion materials.

Quality control

The quality control is done according to the manufacturer's standard quality control.

General Description

Dimensions

The dimensions are for the complete unit after installation. During the transport to the site as well as movement inside the hospital building, we can separate the equipment to reduce the dimensions of the complete unit to be able to pass through the narrow doors and gates of the building.

Nomination

PROMED 50 is sterilizing equipment for infected dangerous waste originating from public health activity

Field of utilization

PROMED 50 equipment is used for sterilization and decreasing the volume of waste originating from public health.

After shredding the hospital waste to an acceptable size, the sterilization is done by treating the waste and all inner components of the system with 138 °C steam for 10 – 15 Minutes. After the sterilization process, the waste is cooled down to for safe handling. (Sterilisation heat programable up to 145°C, also sterilization time and cooling temperature can be programmed upon request).

The discarded waste can be accepted as steril communal waste. (Minimum Sterilisation efficiency: 8 Log 10)

After sterilizing the waste with heat treatment, PROMED 50 system decreases the volume significantly, which compared to the traditional processes, not only decreases the cost of dumping, but also the cost of transportation.

The process destroyed the following micro-organisms:

- bacteria flores, microbacterias, fungus spores
- neutralization of viruses

The equipment is suitable for the treatment of general medical waste.

Description of units of equipment

The units of the equipment are illustrated with the help of the following diagrams:

MAIN COMPONENTS OF THE SYSTEM
Openable lid of feeding chamber
Insulation layer on feeding lid
Openable lid of feeding chamber
Opening /closing device of feeding lid (pneumatic cylinder)
Security ring mechanism for feeding lid
Opening /closing device of security ring (pneumatic cylinder)
Security lock mechanism for security lock
Opening /closing device of security lock (pneumatic cylinder)
A position sensor on pneumatic cylinder
The window for checking shredding
Sealing for feeding lid
Steam Generator
Steam Generator Pump
Water Tank
Funnel over shredder
Shredder unit
Shredder shaft (x1)
Shredder reduction gearbox (x1)
Shredder reduction gearbox motor (x1)
Shredder shaft pressure sealing components
Waste trap door
Waste trap door closing device (pneumatic cylinder)
Water level sensor of Steam Generator
The openable lid of discharging chamber
Insulation layer on discharging lid
The openable lid of discharging chamber
Opening /closing device of discharging lid (pneumatic cylinder)
Security ring mechanism for discharging lid
Opening /closing device of security ring (pneumatic cylinder)
Security lock mechanism for security lock
Opening /closing device of security lock (pneumatic cylinder)
Position sensor on pneumatic cylinder
Sealing for discharging lid
Pressor sensor of chamber wall
Pressure sensor
Pressor sensor of treated waste
Mechanical safety pressure valves (2x)
Steam inlet valve
Steam outlet valve
Cooling water/air inlet valve
Draining valve
Pneumatic cylinder actuator valves
Plc control panel

User control panel
Air compressor
Sterilized Waste Tray
Sterilized Waste Tray Handle
Sterilized Waste Container

OPERATING DESCRIPTION

The operating cycle of PROMED P50 equipment

After the execution of the previous cycle, the machine is in a sterilized and closed position.

With the pushing of the control button, the Control device permits the feeding. The machine eliminates the pressure of the sealing of the feeding lid, opens the safety ring and lock of the feeding lid and the Operator with the pressing of the permission button opens the feeding lid and stays steady for feeding.

Feeding is done by manually. The waste must be placed in the upper chamber.

While feeding, the shredder is switched off throughout the feeding process, for safety precautions.

After closing the upper chamber air-tight, the PLC unit starts the sterilizing program, which automatically operates till discharging.

First, the feeding lid ring and bolt close and the seal is put under pressure.

The machine checks the air-tight closing.

The first phase of the sterilizing program is the shredding, the shredder starts automatically, and with an optimum program cuts the waste into the required size.

The average shredding time depends on the composition of the waste. The end of the shredding is observed automatically or by pushing a control button by the operator.

If shredding is observed automatically for safety reasons the shredding continues for a couple of minutes, so that the waste may completely empty the knives and grate. But as this waste has been sterilized with the rest of the waste also, it does not matter if some waste remains in the shredder as this will be discharged with the next feeding.

After this stage, the temperature rises until the temperature in the center of the waste reaches 138 °C. (Programmable up to 150 Degrees if requested)

The temperature of the waste should at least remain at not lower than 134 C. degree for 10 to 15 minutes. (Programmable up to 150 Degrees and up to 60 minutes if requested)

The 134 C degree and the time limit of 10 minutes provide the guarantee of the sterilizing of waste.

Please note, that with the temperature the pressure also increases to proportional to temperature. The optimum sterilization and steam consumption are controlled by taking into consideration the quantity of steam, temperature, and pressure data.

After the sterilizing has been completed, begins the cooling process of the chamber by blowing pressurized air into the pressure vessel.

After reaching the cooling time, the following steps are made automatically:

- draining of condensed water into the sewage

- pressure equalizing
- opening of safety ring and lock of discharging lid
- blinking of the green lamp to allow the Operator to open discharging lid

The opening of the discharge lid is done by the Operator by pushing the operating permission button. When releasing the button the opening process while be interrupted for safety reasons, therefore the Operator must constantly push the button till the opening process is finished.

After this stage, the waste-collecting container must be positioned below the unloading tray so the waste will be emptied in the waste collection container..

The Operator pulls out the container and by constantly pushing the operating button, closes the discharging lid.

When the lid is closed, the control device automatically closes the lid's safety ring and lock, and the sealing is put under pressure

With the completion of this process, the sterilizing cycle ends.

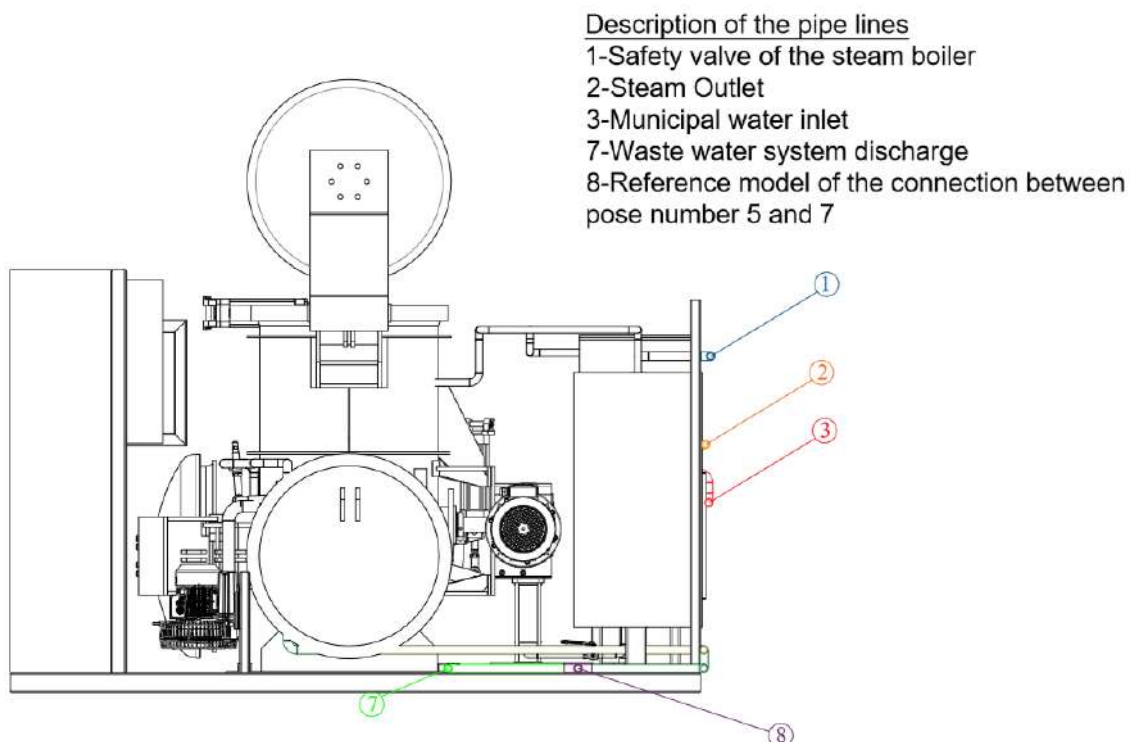
The whole cycle is controlled by the Control PLC, which not only controls the system but by the end of the program records, the temperature, pressure, time, the sterilization value, etc... of each phase.

Through the monitor of the PLC, the condition of the equipment can always be followed by the operator.

Energy balance

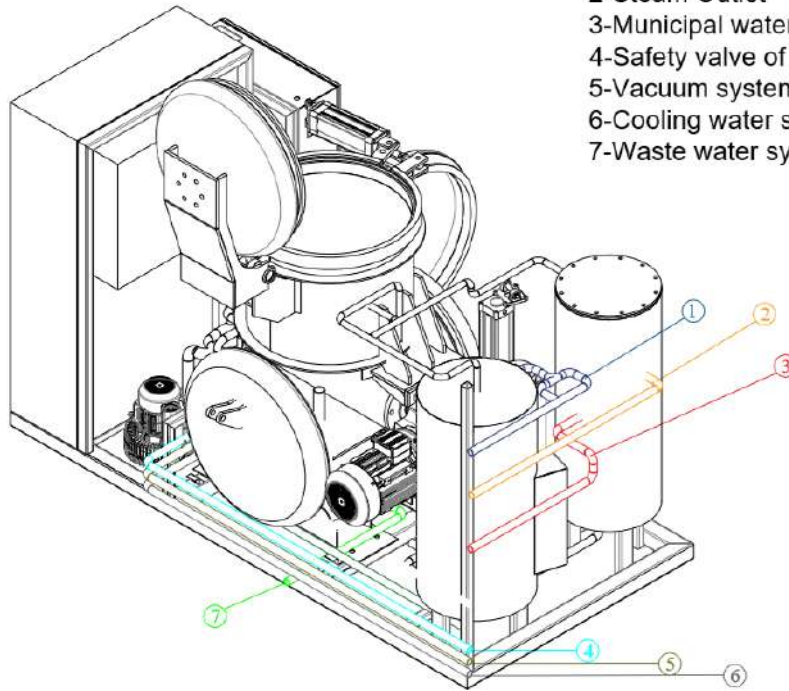
The pressure vessel is insulated. The aim of heat insulation is to decrease temperature loss and to improve the average efficiency.

TECHNICAL DIAGRAM



Description of the pipe lines

- 1-Safety valve of the steam boiler
- 2-Steam Outlet
- 3-Municipal water inlet
- 4-Safety valve of the sterilization unit
- 5-Vacuum system discharge
- 6-Cooling water supply for vacuum motor
- 7-Waste water system discharge



Description of the pipe lines

- 4-Safety valve of the sterilization unit
- 5-Vacuum system discharge
- 6-Cooling water supply for vacuum motor

